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JULY—AUG. 1980
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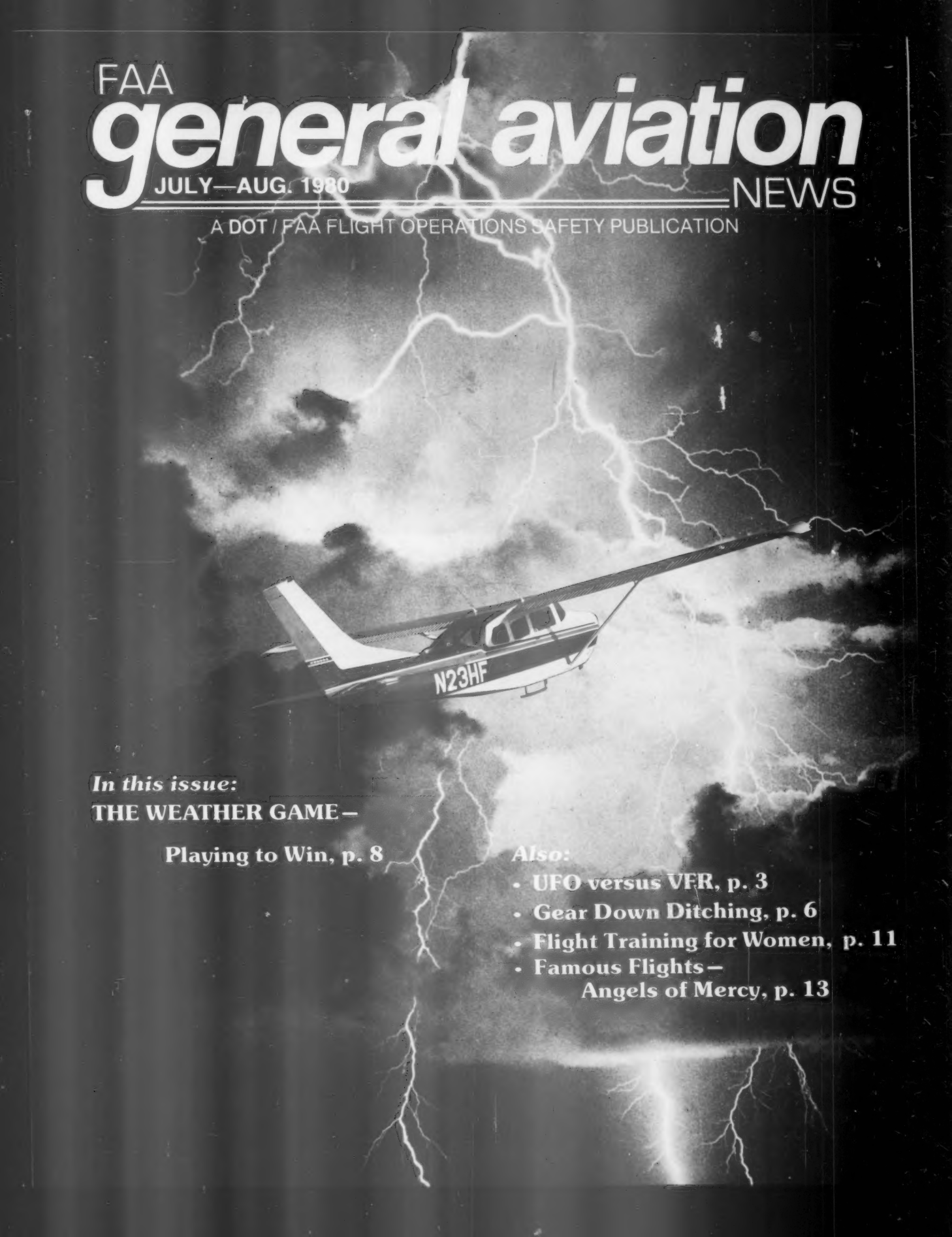

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FAA GENERAL AVIATION NEWS

DEPARTMENT OF TRANSPORTATION/ FEDERAL AVIATION ADMINISTRATION

JULY-AUGUST 1980
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BRIEFS

DEAD AIR. When you key your microphone you block off your receiver on that frequency—right? Partly right. You also block out every other receiver tuned to that frequency in the area. Inadvertent keying of the transmitter is a growing problem that can create danger for any pilot in the air traffic system.

This is a very good reason for 1) listening carefully before you key, so that you do not render incomplete a transmission from air traffic control to one of your fellow pilots, and 2) making certain that your microphone is not being keyed unintentionally by nervous hand pressure or improper stowage. Microphones rarely become jammed by mechanical failure; careless usage is more often the culprit. Allowing children to "touch" the instrument is asking for trouble. Except in an emergency it should never be handled by anyone other than the pilot.

Inspect microphone plugs and jacks for looseness or fraying and have necessary repairs performed by an FAA approved repair station. Incidentally, if you find yourself victimized by radio reception blockage at a time when you have urgent need of communication with air traffic control, remember that most FAA ground facilities have more than one frequency, and they always guard 121.5.

ALTIMETER AND AEROBATICS. Apparently some airshow performers are under the impression they must comply with the provisions of FAR 91.81 ("Altimeter Settings") during aerobatic flight. However, 91.81 applies to *maintaining* a flight level or cruising altitude, something not done in aerobatic flight.

HOT FLASHES. Electrostatic charges that build up on fueling equipment during fueling operations are an ever-present danger, especially so in hot weather when the air temperature is close that of some fuels' flash points—the temperature at which the fuel vapors can be ignited. Proper grounding of the airplane and fueling equipment, reducing the fuel flow to lessen the static build-up, and eliminating splashing of fuel which causes misting and stirs up vapors, all help to decrease the possibility of a static discharge that could make a hot day much hotter.

SWITCH HUNT. Unauthorized modification of required warning systems on business jets, to permit "hand-flying" the airplane in near-Mach I speed ranges without having to cope with aural signals and/or automated control responses, has become a potential hazard to flight safety. Illegal, unmarked cut-out switches were found recently in half a dozen *Learjets*.

Cut-out switches invalidate an aircraft's airworthiness status and jeopardize the pilot's ability to maintain control in certain phases of flight—especially if the switch is left open without his knowledge. Depending on how it is wired, a cut-off switch could deaden several warning systems. Operators of *Falcons, Sabreliners, DH–125s, BH–125,* and *Citations,* as well as *Learjets,* should have them undergo inspection for removal of unauthorized switches and checkout of all warning systems.

UFO vs VFR

You may or may not believe in the reality of UFO's from outer space, but if you are a pilot you have probably had more than one occasion to become concerned about unidentified flying objects—namely airplanes—that materialize abruptly in the vicinity of your flight path.

Given the continuing increase in aircraft operations at large airports and the rising numbers of jets and other high performance aircraft, the responsibility of the VFR pilot for maintaining a safe separation from other traffic is greater than ever. The National Transportation Safety Board reported 36 midair collisions in 1978—a record high for the past decade—and most of these involved VFR aircraft.

What can the concerned VFR pilot do to maintain his safety? Two things:

1) Make certain his scanning technique is super sharp.

2) Utilize available radar to fit himself into the flow of traffic in and around major terminals.

About half of the midairs take place within range of an approach/departure control facility, where radar traffic advisories and vectoring are available on request to VFR traffic. Radar is not a substitute for your own eyes, but it can often help to sharpen your vigilance.

A case in point is a recent accident near Tucson, involving two single engine aircraft, a *Skyhawk* (Cessna 172), and a *Cardinal* (Cessna 177), on a clear bright wintry morning with 60 miles visibility and seemingly endless quantities of unoccupied airspace. The *Skyhawk*, a high-wing aircraft painted white top and bottom, had departed from Mesa, Ariz. (near Phoenix) shortly after dawn on a VFR flight to Tucson International. The pilot, ex-military, held a commercial certificate with instrument rating. On board with him were his wife and one other man, who was accompanying him to a business meeting in Tucson.

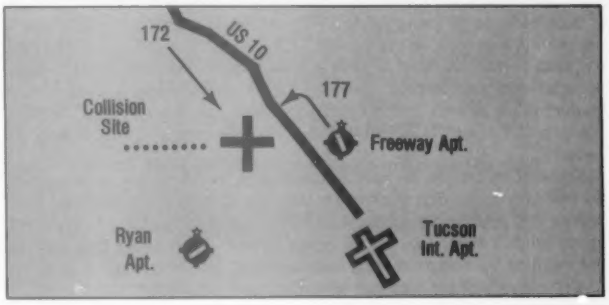
The airport is located in a desert basin surrounded by mountains that reach up to nearly 9,000 feet. The *Skyhawk* was approaching the city from the northwest, on a preferred route over a freeway (U.S. 10) that led through a broad valley between the mountains. At 8:00 a.m. the pilot contacted approach control and was radar-identified at 15 miles northwest of the airport. At this time he was flying at an altitude of 3,500 feet, over terrain that is approximately 2,400 feet MSL. The *Skyhawk* pilot was advised to "resume own navigation" for a straight-in approach to Runway 11L.

Meanwhile the *Cardinal*, also a white painted high-wing aircraft, had taken off from Freeway Airport, a small field adjacent to U.S. 10 and about 12 miles northwest of Tucson. The 28-year-old pilot, the only person on board, had accumulated 231 hours of flight time and held a private pilot's certificate. His ultimate destination was Yuma, about 200 miles west, but he planned to make an initial stop at Ryan Airport for fuel, which was not available at Freeway. Ryan is approximately 10 miles west of Tucson International.

The *Cardinal* pilot did not contact air traffic control, either before or after taking off. His aircraft did not show up as a target on the radar screen. Approach control was not aware of the operation. Witnesses on the ground at Freeway saw the airplane take off from Runway 30 and enter a left climbing turn, which would place it on the west side of U.S. 10.

Several other witnesses stated later, according to the National Transportation Safety Board report, that shortly after 8:00 a.m. they saw two small aircraft in close proximity in this area, one heading inbound toward Tucson, the other climbing out from Freeway. One witness was a fireman who had just reported to work at the North Tucson fire station. He said:

"I was looking toward the northeast. At this time they both appeared to be flying towards the southeast with one plane approximately 20 feet higher than the other. They both appeared to be flying rather low, about 1,000 feet (above the ground). The plane that was higher (Plane No. 1) was about 25 feet behind the second craft (Plane No. 2). Plane No. 2 was climbing at an angle of about 30 degrees and was turning to its left. Plane No. 1 appeared to be following a straight level path. They continued in this manner until impact. I saw nothing that would indicate to me that either pilot saw the other."



After the collision, the wing was sheared off the *Cardinal*—which fell toward the ground in a spinning dive. The 172 appeared to climb for about 30 feet, according to the fireman, and then entered a diving descent. The airplanes hit the ground about a quarter of a mile from each other, about 2½ miles northeast of Freeway Airport. Both airplanes were destroyed by fire, and all four persons on board died.

The Safety Board gave the probable cause of this accident as "failure to see and avoid other aircraft." Both pilots were engaged in a perfectly legal operation, and presumably both were scanning visually. The fact that they were flying more or less directly into the morning sun could have been one of several factors contributing to the collision. But air traffic control authorities believe that one unnecessary factor was that each aircraft *was unknown to the other*, and only one (the *Skyhawk*) was known to approach control. Possibly the *Cardinal* pilot was unaware of the traffic advisory service available to VFR aircraft in such circumstances. Had he notified approach control of his intentions with a radio call, the *Skyhawk* pilot might have been vectored safely away from his intended flight path. At the very least, the pilot would have been alerted to the presence of an aircraft climbing out from Freeway, which apparently he did not see on his own.

THE APPROACH CONTROL FACILITY

Most VFR pilots are familiar with *local* controllers whom they see in their glass-walled cab atop an FAA control tower, whose function they know is to exert advisory control over aircraft landing and taking off. Less familiar is the *approach/departure control facility* which is usually, although not always, located in the same tower in a windowless room underneath the cab. Most approach/departure control facilities are radar-equipped, and their primary function is to provide separation for IFR traffic for that segment of the airspace that lies between the airport traffic area and the en route sector. Surveillance up to 40 miles is maintained by means of radar and radio contact.

Over the past 20 years, as more and more terminals have been equipped with radar, FAA has been steadily expanding its radar advisory services for VFR traffic.

These services were introduced in the early 1960's, when VFR pilots flying near airports with radar-equipped approach control were able to ask for "radar advisories"—radar-derived location of other traffic being worked by the controllers, which could be of possible concern to them.

This early stage of the service was expanded in the late 1960's to "Stage II", which included sequencing VFR aircraft for the landing approach prior to reaching the airport traffic area.

In 1970 the Terminal Radar Service Area— or TRSA—was developed. The service provided in a TRSA (also known as Stage III) includes not only radar advisories and sequencing, but also continuous radar separation (1½ miles laterally and 500 feet vertically) between all participating VFR aircraft and all IFR aircraft within the airspace designated as a TRSA.

RADAR SERVICE AREAS CHARTERED

Beginning in April of this year, these 132 Terminal Radar Service Areas across the nation are being indicated on aeronautical charts. The TRSA looks very much like the mandatory TCA, or Terminal *Control* Area, on a sectional, but there are some important differences. One, Terminal Control Areas are colored blue, while the TRSA's are magenta (purple). Two, the utilization of air traffic control services by VFR pilots in a TCA is *mandatory* at all times, while VFR participation within a TRSA is *voluntary*. Furthermore, at the busiest TCA's landing or taking off is limited to pilots holding at least a private pilot's certificate, and flying a transponder-equipped aircraft, whereas TRSA participation is available to student pilots as well, and a two-way radio is the only required "special equipment." (See "TCA and the VFR Pilot-Revisited," in the May-June issue.)

Some pilots are uninterested in terminal radar advisories because they do not wish to burden themselves with the details of an air traffic procedure that sounds complicated and time-consuming. They have heard about Stage I and Stage II and Stage III and TRSA's and they just do not want to be bothered with remembering the differences and trying to discover which services are available at which airport.

In point of fact, using the service requires very little preparation or memorization. You simply contact the approach/departure control position of the air traffic facility maintaining radar surveillance over the area you are flying in, and tell them your location and intentions. They will establish radar contact and then provide you with traffic advisories as well as sequencing and separation, if the latter are appropriate. You can decline any or even all of these services and still receive added protection from the possibility of a midair collision. The fact that you are no longer an "unknown"—that air traffic control knows *who you are and where you are going*—means that they will be watching your progress for any conflict possibility, even though you may not hear from them again.

This does not mean that you can afford to relax your own vigilance in scanning for other aircraft; it simply means that you are getting some extra help from radar scans. Almost all air carrier traffic is IFR, for example, and these would be obviously separated from you, but there could be other aircraft in the area which are not in contact with approach control.

Unknowns are a real problem to the controller. If they are transitting the area at a low altitude they may not show up clearly, or at all, on the radar scope. If they do show up the controller has no way of contacting the pilot, and unless the aircraft has an altitude-encoding transponder functioning there is no way to know its altitude. Even when the altitude is transmitted by a transponder, the controller is unable to verify this information with the pilot, so the most he can tell other pilots is that there is "possible conflicting traffic, your altitude, unverified." The VFR pilot who makes himself known to approach/departure control is making an important contribution to flight safety, without burdening himself in any way with additional flight duties.

LOOK OUT FOR DETOURS

Some pilots have the impression that if they contact approach control when making a VFR approach to land they will be routed over a long, roundabout course, and possibly delayed in order to accommodate air carrier traffic. Normally all vectoring of aircraft is done for the purpose of accomplishing an orderly, safe flow of traffic, not to favor certain aircraft. Understand that the controller is dealing with a great variety of aircraft of many different sizes and speeds, coming from a variety of directions. The apparently meaningless detour you may be asked to make could be for the purpose of assuring separation from high performance traffic which are still many miles distant and as yet invisible to you. If you feel strongly about complying with a vector from approach control you can always decline it. But you should advise the controller of your intentions.

While the full range of VFR radar advisory services are available only at the 132 designated Terminal Radar Control Areas, limited services are provided at an additional 113 approach/departure control facilities (essentially traffic advisories and sequencing). These are identified, with their frequencies, in the Airport Facility Directory, an FAA publication normally available for inspection at flight service stations or for sale by fixed base operators.

However, pilots who do not have this information are at liberty to contact any control tower along their route and ask for the frequency of the facility having approach control jurisdiction. (In some areas approach

APPROACH CONTROL SURVEILLANCE IS NOT NORMALLY PROVIDED:

1) Within the airport traffic area or area of local control.
2) After a pilot acknowledges sighting the aircraft he is sequenced to follow. (Make certain you have the correct target, and inform approach control immediately if contact is lost.)
3) For "unknowns" which may or may not show up on the radarscope.
4) For weather avoidance.

CAUTION: It is your responsibility as a pilot to decline vectors which might render it impossible for you to maintain VFR weather conditions or safe separation from terrain obstacles or other aircraft. The pilot is always responsible for the operation of his aircraft.

control is provided by an En Route Air Traffic Control Center, instead of from a terminal. Airports with FAA control towers are shown in blue on sectional charts.)

The block of airspace delineated in purple on the sectional chart as a TRSA has the familiar shape, like the TCA, of a round upside down wedding cake; with a narrow core extending from the surface up to the ceiling, usually about 8,000 feet, and concentric layers extending out from the center to a maximum width at the ceiling of about 25 nautical miles. The same separation and sequencing services provided in a TCA are given in a TRSA but the area cannot be considered as being under positive control because of the possible presence of non-participating aircraft.

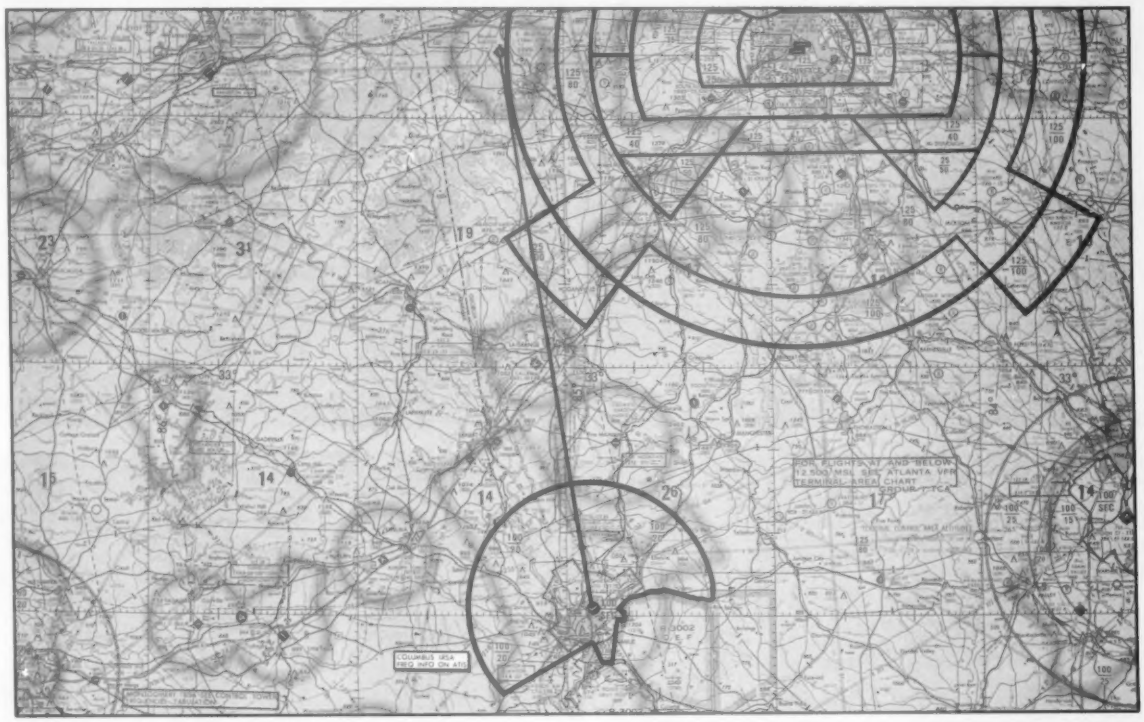
Unlike the TCA, the purple boundries *do not fence out any aircraft*, regardless of equipment or pilot certification. Any pilot is free to disregard the TRSA boundary lines, and navigate on his own. However, the purple lines indicate an area of heavy traffic including air carriers, where FAA has considered it advisable to install additional surveillance equipment and additional personnel for the express purpose of providing radar separation for VFR aircraft. In the 10 year history of TRSAs, no midair collisions have taken place between aircraft when both were being worked by approach/departure control.

DEPARTURE PROCEDURES

VFR pilots departing a TRSA are encouraged to contact clearance delivery before taxiing and to state their intentions, which will be relayed to departure control. After taking off they will be advised to contact departure control on a given frequency, and the departure controller, already familiar with their intentions, will be able to assist them along their way through this segment of the airspace as speedily and directly as possible. Note that when being vectored by approach/departure control a pilot does not have to comply with the altitude requirements of FAR 91.109, but will be advised when to resume compliance. Departing pilots will be informed when departure control services are being terminated. Similarly, inbound pilots, when advised to contact local control, should realize that radar surveillance is terminated. Some tower cabs have radarscopes, but local control depends primarily on visual and radio contact.

Here again, even if the pilot elects to navigate to cruise altitude on his own, the fact that his intentions are known will help controllers and pilots maintain safe traffic separation throughout the TRSA area.

VFR is fine, when the weather permits. But UFO's anywhere near a major airport spell trouble. Make yourself known. ■



A pilot intending to depart West Georgia Regional Airport, near Carrollton, Ga, on a southerly VFR flight to Columbus, Ga. would have reason to be concerned about the busy flow of jet traffic departing or approaching Hartsfield/Atlanta Airport. Although his course would keep him just outside of the Atlanta Terminal Control Area (blue lines), nevertheless the adjoining airspace is heavily travelled by aircraft. The pilot could enhance the safety of his flight by contacting Atlanta approach control, giving his intentions, and asking for radar advisories.

Even if the TCA controllers were unable to comply, because of numerous aircraf. utilizing the TCA, safety would be improved by the fact that the transiting plane would not be an unknown. In any event, shortly after becoming airborne the pilot could contact approach control at Columbus, which has a Terminal Radar Service Area (purple lines) expressly designed to assist VFR pilots. Although complete TRSA services for traffic separation, vectoring and sequencing to land do not begin until the perimeter of the TRSA is reached, radar advisories concerning traffic may be used well beyond that point.

Approach control frequencies are available from the taped airport traffice information service (ATIS) or from the tower or flight service station.

Don't Give Up the Ship!

Gear-Down Ditchings at Sea are Survivable

For a total non-swimmer Toby Alvis had flown over a lot of ocean—many thousands of miles of Pacific Ocean, in fact. He had experienced a few spots of trouble in route, but never anything serious enough to get his feet wet. On this occasion, however, he was outbound from California and a good 500 miles short of the beach at Waikiki when he realized that a ditching was inevitable. The electrical pump that boosted fuel from the reserve tank in the cabin to mains had broken down. All efforts to repair the pump were futile. There was no help for it but to radio for help, keep flying normally meanwhile, and review the ditching procedures.

Toby had ample experience to reflect upon. An ex-farm boy from near Bloomington, Il., he had logged some 500 combat flight hours with the Marines in Vietnam. After four years of service he had settled down in southern California, up-graded his flying ratings and taken up ferrying aircraft across the Pacific. During four years with Southern Cross Aviation, which specialized in ferrying singles and twins to Australia, Toby had heard and told his share of stories about survival at sea in a light plane. Now, for the first time, he was facing a real-life situation.

In his favor was the presence of the S.S. Manulani, a Honolulu-bound freighter, which had been alerted to his situation by the Coast Guard and which had steamed to his reported position. On sighting Toby's 185, the captain stopped his ship dead in the water and put over a lifeboat. Rescue was at hand, provided that the ocean depths or sharks did not get him first.

Toby was well aware of the prevailing belief that his best chance for survival was in a low-wing airplane with retracted gear. Gear-up gave you an opportunity to slide into the water with a belly landing, and the low wing gave you better buoyancy than the high wing. His Cessna 185 had fixed gear and a high wing and, of course, he could not swim a stroke.

After some worrisome hesitation, Toby made up his mind to "follow the book" and take his chances while he still had power. Following a mental checklist he donned his life jacket, tightened his restraint harness, opened the cabin door, and locked the latch so that it could not become jammed shut if the fuselage were damaged on impact. He padded the instrument panel with his suit jacket to protect his face, in case his harness tore loose, signaled to the lifeboat, and began his descent.

The ocean surface showed him a ten-foot swell, and he estimated the winds at 10–15 knots—appropriate conditions for a landing parallel to the water movement, according to the book. He lined up with the swells and aimed his nose at a point halfway between the lifeboat and the freighter. He made his approach with full flaps and at minimum above-stall speed, cut his power and eased back on the wheel. The airplane plopped down on the next crest. He never recalled the actual splash-down; he only knew that suddenly "there was green water all over the windshield." The nose tipped down, but only momentarily and then the aircraft righted itself. Over his headset he could hear the Coast Guard pilot's voice asking the ship, "Is he still alive?"

That he was, but with the cockpit rapidly filling with water his anxiety about drowning took hold, and instinctively he inflated his life jacket. This departure from reccommended procedures cost him an agonizing few seconds of struggle to get out the door. When he finally worked himself free, the airplane had already sunk so low in the water that he had to pull himself around from under the wing before he could rise to the surface. The waves looked enormous and he was reluctant to paddle away from the airplane. He was hit by the wing at least three times before the lifeboat crew plucked him out of the sea. He still had his boots on.

His plane sank out of sight within 15 minutes of impact. With it went his suitcase and all his good clothes, a brand new camera and his ancient weatherbeaten straw hat. He felt bad about the hat, but all in all pretty lucky. The comforting sight of the freighter standing by gave him the impression, "God must be saving me for something big."

Uninjured, Toby emerged from the experience with a cheery optimism about ditching survivability with fixed gear. In fact, he concluded that if he had it to do again and was in a retractable, he would probably put the gear down, particularly in rough water. He theorized,

"The extended gear will help drag you to a smooth, quick stop. With a tri-gear, I'd certainly put the gear down, because the main wheels are far enough aft of the center of gravity so that you'd be fairly well slowed down beforer the nose gear dug in. With the gear up, if you bounce off a wave and back up into the air, there's a very good chance that when you hit again the nose will be so far down you'll go right under and never stop.

"As for the high wings, well, the plane may settle lower, but at least you can slow down your approach with full flaps without worrying about slewing around in the water."

Interestingly enough, statistics on ditching give some credence to Toby's theories. A review of ditching accidents reported by the National Transportation Safety Board for the three-year period 1976–1978 shows 104 light plane ditchings. About half (54) of these were made with retracted gear, but retractables accounted for 65 percent (15 out of 23) of the fatal accidents. Factors other than gear position would have to be studied carefully before any conclusions could be drawn from this brief review, but there is enough evidence on hand to dispell any notion that fixed gear and high wings will necessarily drag you down to Davy Jones' locker.

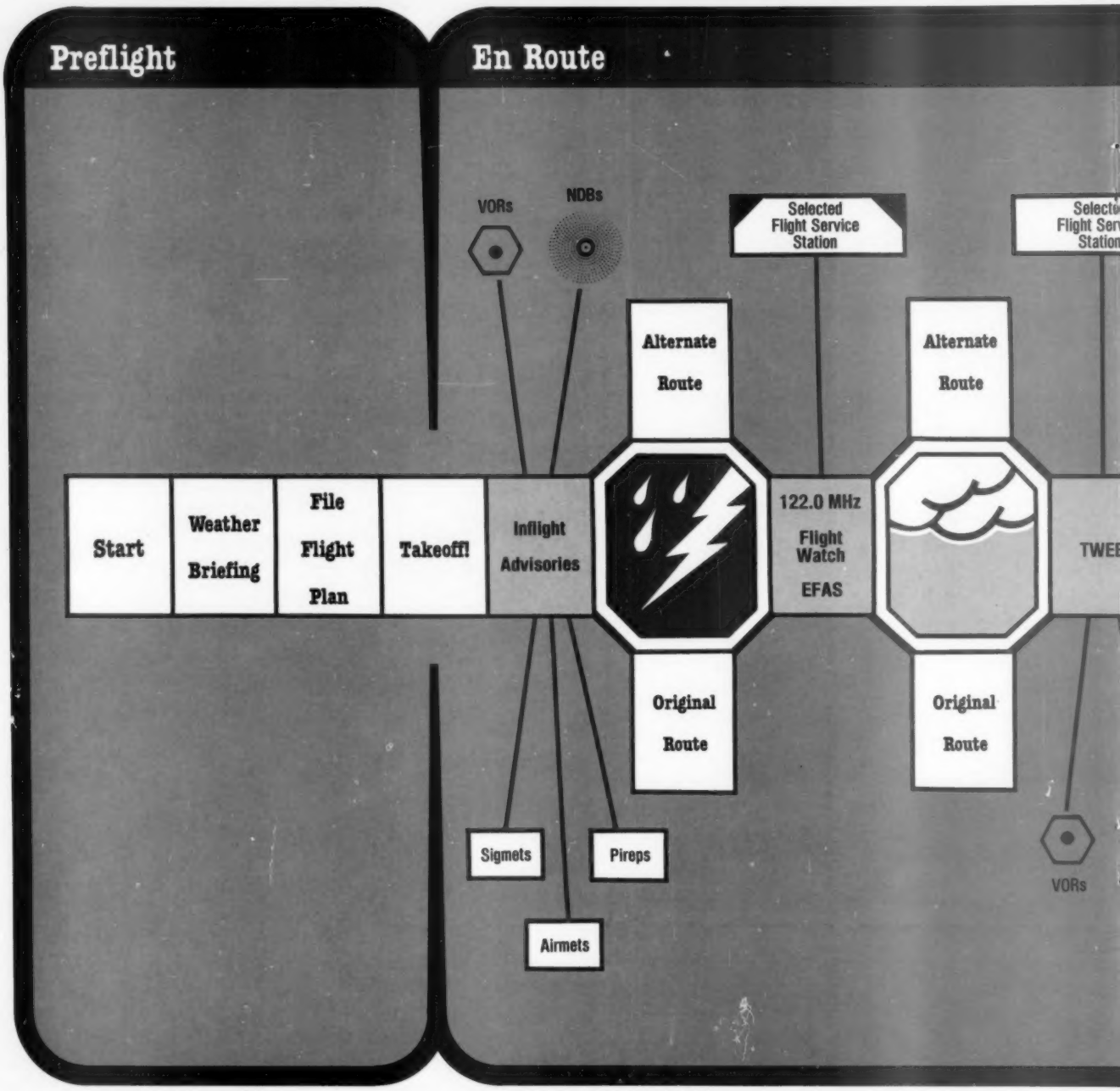
Someone may have something big in mind for you. *Don't give up the ship!* ■

Ditching Sequence: Toby brings the 185 down with full flaps (1) and (2) the nose tips over on impact. The airplane stays afloat (3) until Toby can exit, carrying a life preserver as well as wearing a life jacket (4). SS manulani life boat crew pulls him safely on board (5) after 10 minutes in the water.

(The Coast Guard in its publication, "Aircraft Emergency Procedures over Water," recommends that retractable gear be left up, because if down it can result in a "violent and rapid deceleration" and subsequent loss of control—which can flip the aircraft over or cause it to dive into the water. The Coast Guard also notes that "low-wing aircraft, due to the flotation support derived from the wings, are safer for ditching than high-wing types. The high-wing aircraft tends to sink rapidly after impact until the wings settle in the water.")

THE WEATHER GAME

Getting there from here, simplified into an enjoyable pastime for adults



1) **START.** To enter this square you need a current medical, a pilot certificate, student to ATP, and an airworthy aircraft, freshly preflighted.

2) **WEATHER BRIEFING.** Contact nearest flight service station by telephone or in person. If weather is favorable, proceed to

RULES OF THE GAME

3) **FILE FLIGHT PLAN.** File in accordance with weather briefing. Estimate range with fuel on board, considering winds aloft forecast. Stow current charts at hand. **Take off!** Proceed to

4) **FLIGHT ADVIRSORIES.** Check these after you reach cruise altitude, or whenever you observe worsening weather ahead. Monitor your radio for SIGMETS (significant meteorlogical information), AIRMETS (airman's meteorological information) or PIREPS (pilot reports).

SIGMETs and *AIRMETs.* SIGMETs forecast or report on the existence of tornadoes, thunderstorms, hail, severe and extreme turbulence, severe icing, and widespread dust or sand storms that lower visibility to less than three miles. AIRMETs concern less severe conditions, such as moderate icing, moderate turbulence, sustained winds of 30 kts or more at the surface, widespread areas of lowered ceilings (less than 1,000 feet) and reduced visibility (less than three miles), and obscuration in mountainous areas.

SIGMETs and AIRMETs are broadcast by a FSS or NAVAID every 15 and 45 minutes after each hour; however, during their first hour of validity, SIGMETs are broadcast every 15 minutes. NAVAIDs with voice capability are identified on sectional charts by a line under the frequency.

Pilots who have missed possible SIGMETs or AIRMETs may request them at any time from a flight service station.

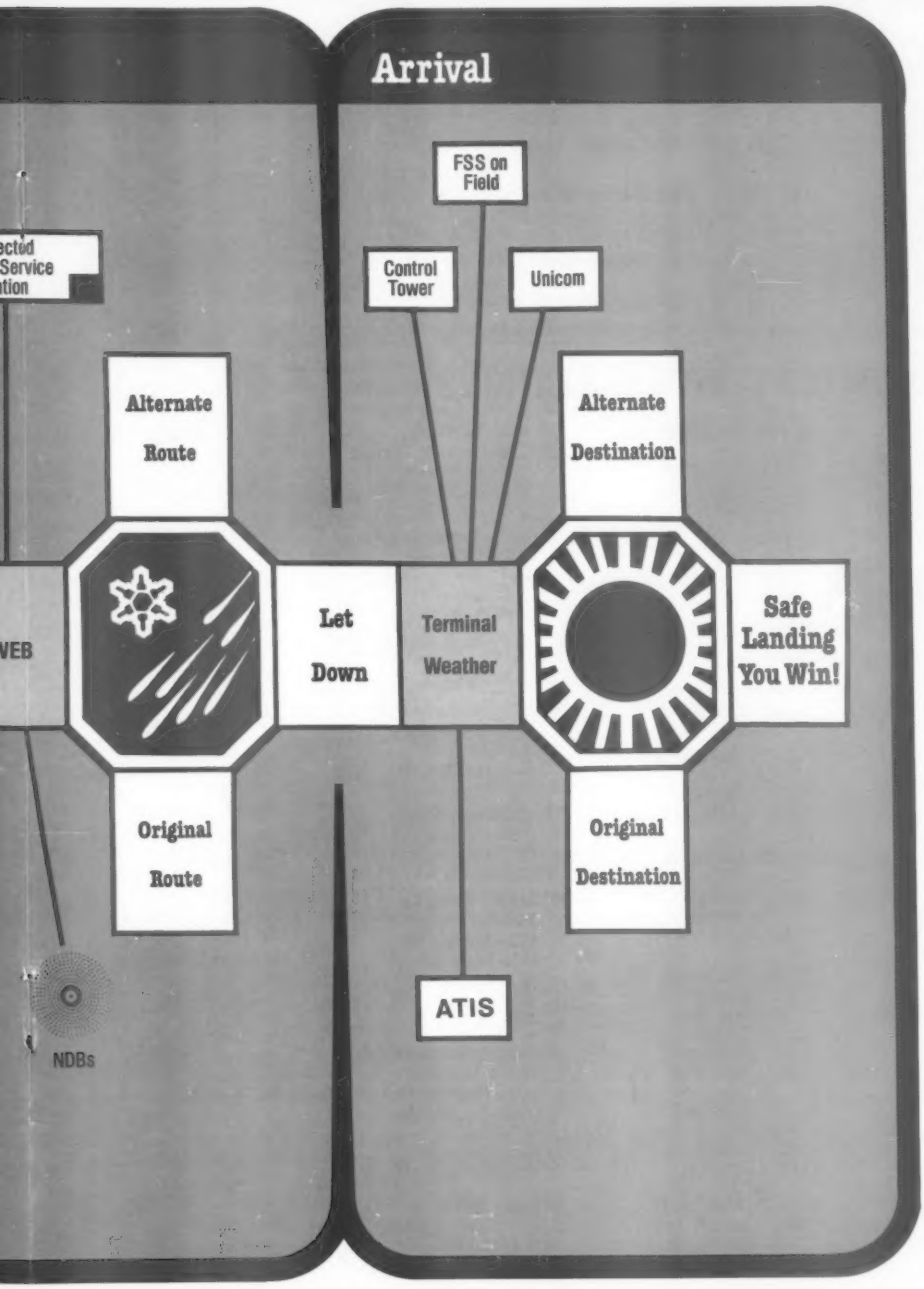
Pilot Reports. If the flight is being conducted with a ceiling below 5,000' with visibility at or below five miles or if there are thunderstorms forecast or reported, the player should request PIREPs from the nearest FAA ground facility or remote transmitter concerning weather encountered by other pilots along the player's route or proposed alternate. PIREPs contain information on height of cloud tops, height of upper cloud layers, thunderstorms, icing, turbulence, or strong winds. The player may also be asked to volunteer his own pilot reports of weather observed en route.

4A) **ORIGINAL ROUTE.** If weather conditions along his route are favorable, the pilot continues along his original route.

4B) **ALTERNATE ROUTE.** If weather conditions exceed the pilot's capabilities, the player selects an alternate route and destination and notifies the flight service station of the change in his flight plan.

5) **FLIGHT WATCH.** Whenever the player passes near a flight service station with En Route Flight Advisory Service (EFAS), known more commonly as "Flight Watch," he can tune to 122.0 MHz to request live advisories on weather along his specific route and at his altitude. A specialist at an FSS with Flight Watch provides this information to the player based on reports from other pilots, radar reports, and forecasts from weather facilities.

Flight service stations with Flight Watch are indicated on sectional charts by triangles in the upper left and right corners of their information boxes. Note: The nation-wide Flight Watch frequency, 122.0 MHz, will not be indicated in the information box. →



Each Flight Watch Station on the chart has a number of remote stations that can link the player to the Flight Watch specialist. Such a remote facility will be designated on VFR charts this way:

If the player does not know the name of an FSS having Flight Watch in his area, he may simply ask for "Flight Watch" on 122.0 and give his position. Nearly always the appropriate FSS will respond.

Advisories received from Flight Watch will confirm the decision whether to continue on the ORIGINAL ROUTE or to assume an ALTERNATE ROUTE.

6) **TWEB** (as in tweet). As the flight proceeds, the player can tune to a selected ground station to hear continuous taped "Transcribed Weather Broadcasts" (TWEB). NOTAMs (Notices to Airmen), PIREPs, radar reports, and winds aloft data are provided on the tapes as well as a forecast for the general receiving vicinity and weather observed at specific points within a 400-mile radius of the central broadcasting point. Changes in the weather are transcribed as they are observed.

Flight service stations and VORs with TWEB are indicated on VFR charts by a small blue square on the inside lower right corner of the box containing the name and frequency information:

An NDB with TWEB has a magenta square inside its information box:

After listening to TWEB information, the player can still decide to continue toward the ORIGINAL DESTINATION or change to an ALTERNATE.

7) **TERMINAL WEATHER.** Nearing his destination, the player contacts a flight service station, control tower, or UNICOM (in that order of preference) on the airport to learn landing conditions.

High activity airports have Automatic Terminal Information Service (ATIS), which provides ceiling and visibility (if they are less than 5,000′ and five miles respectively), obstructions to visibility, temperature, wind direction and speed, altimeter setting, and any other information pertinent to the airport (runway in use, instrument approach in use, etc.). The recorded ATIS information is broadcast over a VOR associated with the airport or over a discrete VHF–UHF frequency. Airports with ATIS are indicated in the Airport/Facility Directory and on sectional charts.

(Some airports have, as a permanent facility or as a test, automatic weather observing equipment which broadcasts terminal weather. The player should check AIM or NOTAMs to determine if his destination has such an automatic installation.)

8) **SAFE LANDING.** Depending upon information received en route and from terminal weather sources, the player moves to a "Safe Landing" at the Original Destination or either at the Alternate. Once in "Safe Landing"—if you have followed the rules—you have won the game! ■

FLIGHT WATCH CONTROL STATIONS

1. ABQ—Albuquerque, NM
GUP—Gallup, NM
LVS—Las Vegas, NM
8DM—Davenport Mountain, NW

2. AGC—Pittsburgh, Pa
AKR—Akron, Oh
CMH—Columbus, Oh
IPT—Williamsport, Pa

3. ALW—Walla Walla, Wa
PDT—Pendleton, Or
SFF—Spokane, Wa
4CW—Cottonwood, Id

4. ATL—Atlanta, Ga
CHA—Chattanooga, Tn
GSP—Greer, SC
TYS—Knoxville, Tn
VNA—Vienna, Ga

5. BHM—Birmingham, Al
MGM—Montgomery, Al
MSL—Muscle Shoals, Al

6. BOI—Boise, Id
GNG—Gooding, Id
REO—Rome, Or
4EM—Squaw Butte, Id

7. BOS—Boston, Ma
HYA—Hyannis, Ma
MLT—Millinocket, Me
PWM—Portland, Me

8. BUF—Buffalo, NY
SYR—Syracuse, NY

9. CHI—Chicago, Il
CMI—Champaign, Il
GRB—Green Bay, Wi
MSN—Madison, Wi

10. CHS—Charleston, SC
CAE—Columbia, SC
JAX—Jacksonville, Fl
SAV—Savannah, Ga

11. CPR—Casper, Wy
BIL—Billings, Mt
MLS—Miles City, Mt
THP—Thermopolis, Wy

12. CRW—Charleston, WV
HMV—Holston Mountain, Tn
LEX—Lexington, Ky

13. DCA—Washington, DC
ENO—Kenton, De
LDN—Linden, Va
LYH—Lynchburg, Va
PHF—Newport News, Va

14. DEN—Denver, Co
ASE—Aspen, Co
GLB—Goodland, Ks
LHX—La Junta, Co
OGA—Ogallala, Ne
SBS—Steamboat Springs, Co

15. DET—Detroit, Mi
BTL—Battle Creek, Mi
MQT—Marquette, Mi
TVC—Traverse City, Mi

16. DSM—Des Moines, Ia
BDF—Bradford, Il
CID—Cedar Rapids, Ia

17. ELP—El Paso, Tx
FST—Fort Stockton, Tx
GDP—Guadalupe Pass, Tx
ROW—Roswell, Tx

18. FTW—Fort Worth, Tx
ABI—Abiline, Tx
PRX—Paris, Tx
SPS—Wichita Falls, Tx
TPL—Temple, Tx

19. GFK—Grand Forks, ND
DIK—Dickinson, ND
JMS—Jamestown, ND
MOT—Minot, ND

20. GTF—Great Falls, Mt
BTM—Butte, Mt
FCA—Kalispell, Mt
GGW—Glasgow, Mt
4AS—Ashton, Id

21. HON—Huron, SD
PIR—Pierre, SD
RAP—Rapid City, SD

22. HOU—Houston, Tx
LCH—Lake Charles, La
LFK—Luffkin, Tx
PSX—Palacios, Tx

23. IND—Indianapolis, In
EVV—Evansville, In
FWA—Fort Wayne, In

24. JAN—Jackson, Ms
ELD—El Dorado, Ar
GWO—Greenwood, Ms
MEI—Meridian, Ms

25. LAS—Las Vegas, Nv
BLD—Boulder City, Nv
ILC—Wilson Creek, Nv
TPH—Tonopah, Nv
4AP—Angel Peak, Nv

26. LAX—Los Angeles, Ca
BFL—Bakersfield, Ca
JLI—Julian, Ca
SBP—San Luis Obispo, Ca
4BT—Barstow, Ca
4SK—Saddle Peak, Ga

27. LBB—Lubbock, Tx
AMA—Amarillo, Tx
CDS—Childress, Tx
DHT—Dalhart, Tx

28. MEM—Memphis, Tn
BNA—Nashville, Tn
LIT—Little Rock, Ar
MAW—Malden, Mo

29. MIA—Miami, Fl
CTY—Cross City, Fl
FMY—Ft. Myers, Fl
MLB—Melbourne, Fl
TPA—Tampa, Fl

30. MKC—Kansas City, Mo
EMP—Emporia, Ks
IRK—Kirksville, Mo
3NA—Natoma, Ks
2K5—Marysville, Ks

31. MPV—Montpelier, Vt
ALB—Albany, NY
BTV—Burlington, Vt

32. MSP—Minneapolis, Mn
AXN—Alexandria, Mn
DLH—Duluth, Mn
EAU—Eau Claire, Wi
OTG—Worthington, Mn

33. NEW—New Orleans, La
CEW—Crestview, Fl
ESF—Alexandria, La
MOB—Mobile, Al

34. OAK—Oakland, Ca
BSR—Sig Sur, Ca
AND—Anderson, Nv
FAT—Fresno, Ca
RBL—Red Bluff, Ca
SAC—Sacramento, Ca
4FR—Ferndale, Ca

35. OKC—Oklahoma City, Ok
ANY—Anthony, Ks
BVO—Bartlesville, Ok
FSM—Fort Smith, Ar
GAG—Gage, Ok
GCK—Garden City, Ks
MLC—McAlester, Ok

36. OMA—Omaha, Ne
GRI—Grand Island, Ne
OFK—Norfolk, Ne
SUX—Sioux City, Ia

37. PDX—Portland, Or
EUG—Eugene, Or
DLS—The Dalles, Or
MFR—Medord, Or

38. PHX—Phoenix, Az
INW—Winslow, Az
4GL—Globe, Az
4ML—Mt. Lemmon Az
4SG—Seligman, Az
P01—Ajo, Az

39. RDU—Raleigh/Durham, NC
EWN—New Bern, NC
ILM—Wilmington, NC
INT—Winston-Salem, NC

40. SAT—San Antonio, Tx
HRL—Harlingen, Tx
LRD—Laredo, Tx
RSG—Rock Springs, Tx

41. SEA—Seattle, Wa
NUW—Whidby Island, Wa
SMP—Stampede Pass, Wa
TDO—Toledo, Wa
4LM—Larch Mountain, Wa
4MI—Mission Ridge, Wa

42. SLC—Salt Lake City, Ut
BAM—Battle Mountain, Nv
BPI—Big Piney, Wy
CDC—Cedar City, Ut
DTA—Delta, Ut
GJT—Grand Junction, Co
HVE—Hankville, Ut
LWL—Wells, Nv
RKS—Rock Springs, Wy
4DL—Delle, Ut
74V—Roosevelt, Ut

43. STL—St. Louis, Mo
SGF—Springfield, Mo
VIH—Rolla, Mo

44. TEB—Teterboro, NJ
HVN—New Haven, Ct

ALICE IN NEANDERTHAL LAND

Flight Training Viewed by the Gentle Sex

I came into the flight school office with that ad I had torn out of a newspaper in my hand, and I laid it down on the counter. No one paid any attention. Finally, a man came over behind the counter and picked up the ad. He cocked an eye at me. "You're interested in flying?"

I felt like saying, *"Oh, no, not me, Mister. I drove all the way out to your sweet little airport just to find out which way the wind was blowing,"* but all I could muster was a timid, "Yes, sir."

"When were you thinking of going up?"

"Ten minutes ago, when I got here. I had an appointment. My name is Alice."

"Oh, sure, the schoolteacher. I remember now. We'll have someone with you right away. I thought maybe you were with someone."

He went to the field-side door and spoke to three men who sat in the sun, their feet up on a rail. "Hey, who wants to take this young lady up for an intro?"

The words "young lady" seemed to stir up some interest. In a few minutes I was being escorted to the flight line by a gangling young man in cowboy boots, blue jeans, and a ski vest—a sort of latter day Lindbergh, if you stretched your imagination and believed his stories. As we were getting into the airplane I asked him if he wasn't going to preflight.

"I looked around while we were chatting. Say, how do you know about preflights?"

I told him I had completed ground school, and asked if he wasn't going to check the fuel.

"Already did that this morning."

"Couldn't moisture condense in the tanks on a warm day like this?"

"Well, not enough to hurt you, honey. Say you're pretty smart about airplanes for a schoolteacher. You sound like you're serious about this."

I explained I was very serious about learning to fly, it was important to my budding career as a journalist, and could we get started? Bill smiled and patted my hand. Once we were straight and level, he demonstrated some turns and stalls. The next thing I knew we were back in the pattern. I thought he was going to show me some landing techniques, but he turned off at the first intersection and taxied straight back to the ramp.

"How'd you like your first hour?" the school manager said.

"Actually it was only 0.4 on the Hobbs. Your ad said $10 for a one-hour introductory lesson."

"Say, you *are* serious about flying. Okay, when you come out again, we can set you up for an hour, two hours, whatever you want."

I said I would think about it, and he gave me an I-thought-so look. I gave him his $10 and left. I knew they weren't making money on an intro for $10 and they got hit by a lot of joy-riders, but if they didn't live up to their ad's promise, how could I trust their flight training? There has to be a flight school where I don't have to prove how serious I am.

12–7–79

There is! The school I visited today practically ran up the flag when I walked in. The receptionist showed me to a "flight desk" where she gave me an armful of brochures, a cup of fresh coffee, and a lengthy form to fill out. The polite instructors and the clean airplanes were all sporting the school emblem on their jackets and tails—respectively. Filling out the registration form, however, I felt as if I were applying for a credit card. Couldn't I pay by the hour, I asked the receptionist.

"We like you to pay half of the tuition in advance," she said. "It saves a lot of embarrassment. Paying by the hour can be awkward."

Better awkward than bankrupt, I thought.

I told her I had already taken ground school and asked what happened if I qualified in less than the average time.

"We like to process our people in our own way, but there might be some adjustment."

I began to feel uneasy so I asked to meet my instructor. I was told my instructor would be whoever was available whenever I came out; all were fully competent. I decided to leave, saying I would have to consult my accountant.

Their lump-sum fee itself didn't bother me as much as the feeling of being "packaged." No, I am not looking for a personal involvement, but then neither do I want an automated, drive-in, check-out, punch-the-button arrangement. I am a real live person, with feelings.

12–10–79

I've found it—I think. The airport doesn't look like much. The road coming out felt like an exploded mine field and the tired old buildings looked like an abandoned wartime training base of many wars ago. But the people make all the difference—one big, happy family, all interested in one another and in any stranger who comes by. And they assume that anyone who wants to fly has perfectly good reasons for doing so and doesn't have to justify them.

"Just getting started? Oh, you'll love it!" was the reaction I got all around. These are my kind of people.

Tim, the instructor assigned to me, made a point of explaining he was not a full-time professional pilot but a county deputy sheriff who instructed because he loved to fly and enjoyed teaching others. He is a big rock of a man in his early 30's, easy-going but with a look of restrained authority. He took me out on the porch and pointed out that the field had a few idiosyncrasies: the wind never blew straight down the runway, which was a little crooked, and most of the airplanes were far from new. But anyone who learns to fly here will be used to less than optimum conditions, so that is a plus.

We exchanged a little background, so we wouldn't be two strangers crammed into that little trainer. He is ex-Air Force, is deeply interested in law enforcement, also has a wife, a kid, two dogs, and a stray cat. Never would have guessed.

12–15–79

Around the airplane I noticed some of Tim's easy-going manner disappears. At least he was more attentive to details, more organized and methodical than I would have thought. I had to tell myself, *He's not less interested in me, he's just responding to his responsibilities.*

The first preflight, which for Tim meant going over a list of some 40 separate items, took more than half an hour. Before it was over, I was hopping with impatience to be up in the air. But Tim continued in his same unhurried manner, explaining in detail how each component worked, how it might malfunction, what could happen to me if it did. I must have heard a dozen anecdotes about crashes that occurred because

the pilot had not noticed a missing safety wire, a spot of oil, or a bulge in the airfoil.

"Tim," I said finally, "the first time your instructor went up with you, did he spend this much time on preflight? Or are you doing this because I'm a girl?"

"No, I was in the military. We all knew our necks would be on the line when we went up in those birds. In civilian flying, people take a lot for granted."

"Don't you get bored standing around waiting for me to finish?"

"Not as bored as I'd get standing around at your funeral."

1–23–80

It took a while, but I have shed my teacher's mantle and now fit into this new student role comfortably. I study like crazy and dash out to the airport full of confidence, which fades at my first gaffe, but returns slowly in response to Tim's steady encouragement and unflappability. His teaching philosophy is to avoid criticizing by word or expression—who needs it?—but always to focus attention on what has to be done. He likes to explain the theory of each procedure before demonstrating it, and he is full of praise for my "quick mental grasp." High praise!

1–28–80

Today, I learned to do coordinated turns, first shallow, then medium, then steeper, and I love it. Later, some stalls. Sometimes the break is so soft and the buffet so slight, I can hardly tell I'm stalled. S-turns over a road are great fun. Slow flight, climbing and descending turns, some rudiments of navigation. Each new skill brings more confidence and delight.

2–7–80

A dismal day, weather-wise, off and on rain, so we stay in the pattern, and I make some bumpy landings, with and without Tim's help. Gusty winds could be the problem, so I don't worry yet. But taxiing back, I tried to turn off the runway with the wheel instead of the rudder pedals and bottomed out the nose gear in a small pothole. At least the prop suffered no damage. I'm embarrassed. I know perfectly well that turning the wheel will not turn the airplane on the ground.

Tim says I try to do things too much in my head, that I should learn to feel what is happening. That's not the problem, I tell him. I can't push the pedals all the way down, even with my seat as far forward as it will go—my legs are not long enough. *Why didn't I say so?* He produces a cushion from back in the plane, and I'm suddenly relaxed—such a simple solution.

2–15–80

The last two hours went by so beautifully I see I didn't put anything down. Felt like I owned the sky. Today was good, too, after that business with the fuel cap. For some reason on the preflight, I can't unscrew the cap on the left wing. No matter how hard I try, I can't budge it. I debate whether or not to go ask for help. It's bad enough I need a ladder to reach the wing when all Tim does is stretch up.

When I appear in the lounge he asks me what was wrong and I tell him. Another instructor rolls his eyes heavenward and murmurs, "Female students!" I felt like telling him I had to help *his* puny male student push his airplane back off the parking area the day before. Tim takes me by the arm and heads me back to the airplane. "Sour grapes," he says, and everything is cool again.

2–27–80

Today Tim said we would be staying in the pattern to practice takeoffs and landings. For some reason, my landings are not coordinated with Mother Earth. Perfect flare and a full-stall drop-out, but much too high off the ground. God help the landing gear and the earthworms!

3–2–80

Do I have a thing about landing?

3–5–80

I do have a thing about landing. Today we stayed in the pattern again: progress, zero. Maybe I need new glasses; my eyes could be getting worse.

3–11–80

It's not my eyes. It's me, some demon in my head that doesn't want to learn to land. Tim is patient as ever, but he must be disappointed. I know I am. People keep asking me when I'm going to solo, and I'm running out of excuses.

3–15–80

Today Tim was absent, replaced "temporarily" by Margie, the school's one female instructor. I feel uneasy with her. Are they trying to tell me something? I know Margie has logged tons of hours ferrying aircraft all around the world, but I don't relate well to her. *Resentful?* Maybe. I don't say much, and neither does she, at first.

I execute the maneuvers she asks for, and for some inexplicable reason, I make a splendid landing—flared just right and touched down softly. Then came the flight evaluation: "You're doing fine. You know what to do up there, and you've got all the motor skills."

"I don't think Tim would agree with you."

"Sure he would. I've talked to him. He's a big strong guy but he's no Neanderthal type. He knows good flying."

"He's worked so hard with me. How come I could land okay with you in the cockpit and not with him?"

"Maybe because I'm a woman. You don't have to impress me."

"I didn't think that made any difference in training."

"Sometimes it does, in the beginning. You could be so busy thinking about how Tim is reacting to your flying that you don't keep your mind on what you're doing. And maybe he's so concerned about safeguarding your fragile feminine bones that he gives off the wrong vibrations. This could get worse instead of better. Maybe it's time you switched instructors."

I said that would be putting Tim down unfairly. Margie said no, he had taught me well and everyone knew it.

"Well, maybe after I solo. He deserves the credit for that. When do you think I'll be ready?"

"I think you're ready now." She took my logbook and endorsed it. Then, she said, "Good luck," and got out of the airplane and walked over toward the operations shack.

It was so sudden. I sat there in the airplane for a while with my hand frozen on the throttle. Then, I pushed it in. Without the instructor's weight the airplane seemed light as a bird and I was airborne before I knew it. In a few minutes I was 1,000 feet in the air, all by myself. It was a marvelous feeling.

When I turned downwind and reduced power opposite the shack, I saw Tim come out on the porch and stand beside Margie, looking up, hands on his hips. All at once I felt guilty and worried, and a little frightened—until I noticed how small he looked at this distance, like a figure in a dollhouse. I felt like Gulliver, watching a Lilliputian. It was ridiculous. My hands relaxed on the controls.

"I'm going to land you, airplane," I said. "Matchwood or grease job, one way or another, I'm going to set you down, just me alone. So get ready."

The result was something in between, but good enough for Tim to stick a big thumb in the air and wave me on around. Then I knew everything was fine, and I stopped wondering and just flew, around and around. I never wanted to stop. I had actually made it. I was a pilot. ■

(Editor's Note: excerpted and cleaned up a little from the diary of a young woman learning to fly.)

ANGELS OF MERCY

The liberation of the aircraft cockpit from male domination began as early as 1909, when French Baroness de la Roche became the first woman to fly an airplane. Later, in the Twenties, extraordinary women like Amelia Earheart and Blanche Noyes pushed their way into the forefront of stunt flying and racing. But commercial aviation was another matter. Fledgling air carriers had enough trouble, in the early years of carrying passengers for hire, just filling up seats in their airplanes, let alone overcome the prevalent belief that flying was inherently a man's job, requiring the strength and courage of a lion.

On February 4, 1930, Ellen Church, a 21 year old nurse and student pilot, applied to the San Francisco District Manager of Boeing Air Transport (now United Airlines) for a job as a pilot. Ellen was a little ahead of her time. Almost half a century of flying was to pass before the first woman flew for a U.S. airline (Emily Howell, Frontier Airlines, 1973). But in 1930 the first barriers were broken down by a small band of determined women who took over the in-flight stewarding functions.

Flying had a romantic appeal in those early days, but the cabin environment was described by one passenger as a "chamber of horrors." Sound levels in Boeing's 80–A *Trimotors* were said to be as high as 117 decibels—about equivalent to sitting next door to a jackhammer. Conversation was impossible. Gas and oil fumes were plentiful. Oxygen depletion was evident at higher altitudes and frequent turbulence led to nausea and its inevitable consequences. Mail sacks were often piled high in the aisle, making an obstacle course out of the much traveled route to the rest room; desperately airsick passengers opened their window to relieve themselves. The wicker seats were chosen more for lightness than for comfort. The universal pacifier was the pocket whiskey flask, (most passengers were men) which produced oblivion for some but added distress for others.

Boeing's major route lay between San Francisco and Chicago, with an overnight stop at Cheyenne where flight crews were changed. The Chicago/Cheyenne run was the least difficult. With fairly level terrain most of the way the pilots could fly under the weather or detour around it. But the 950 mile stretch between Cheyenne and the west coast meant crossing both the Rockies and the Sierra Nevada mountains in unpressurized, unheated airplanes. With a service ceiling of 14,000 feet and without sophisticated navigational guidance, the pilots had to rely on visual reference and terrain familiarity to pick their way through mountain passes, where sudden up or down drafts terrorized unseasoned passengers.

Who could better distract passengers from these "occasional inconveniences" than a professionally trained "angel of mercy?" The airline hired Ellen Church, with instructions to recruit seven more nurses immediately—all young, competent and adventurous. This pioneer band of eight was outfitted with a flowing cape and beret, given a familiarization flight, and assigned one to an airplane.

The first flights, on May 15, 1930, were a sore trial to the starry-eyed young nurses. Pilot reaction was negative: including a woman in the flight crew seemed to demean their status somehow. They made it a point, at least in the beginning, to ignore the stewardess, or regard her as so much non-revenue baggage. One trick was to offload the stewardess at some dusty waypoint, on the grounds of being over gross, or to take-off forgetfully while she was occupied in the terminal. Passenger reaction varied from curious and friendly to demanding and offensive.

Before takeoff the young lady was expected to sweep out the airplane, empty ash trays and spittoons, set the cabin clock to local time, adjust the altimeter, make sure the seats were bolted down securely, and hang up the No Smoking sign. Lunch and other supplies had to be stowed

on board, tickets taken and passengers greeted as they came on board. "Comfort packages" of chewing gum for air pressure, cotton for noise, and ampules of ammonia for air sickness were distributed.

En route the stewardess served an unvarying menu of cold chicken, sandwiches, fruit cocktail and coffee. By this time many passengers had lost all interest in food, although some appreciated the fruit cocktail which was laced with brandy. In turbulent conditions there was little the stewardess could do but try to smile and look unworried; her voice could not be heard above the engines, and the mail-strewn aisle was often too cluttered for her to reach a distressed traveller. She was expected to prevent unsteady passengers from using the exit door instead of the door leading to the rest room, or from leaning too far out of a window, or from playfully tossing baggage or mail sacks out. When the airplane was stranded en route by weather for hours or days on end, she helped find the passengers lodging and food, and contacted their sometimes frantic relatives.

At the same time, the stewardesses were strictly forbidden to socialize in any way with pilots or passengers. In time this edict was worn down, obviously, but in their first few years romance simply did not bloom in the airplane cabin. Nevertheless, Boeing was swamped with hysterical letters from their pilot's wives demanding that the stewardesses "menace" be ended.

In short, it was more of an ordeal than an adventure for that pioneering band of eight. Within a year and a half all of them had returned to the comparative serenity of nursing sick people on the ground. But their places were taken by other eager young recruits from many walks of life, and inevitably their presence on board brought about changes in the air service. Comfort and convenience, as well as decor and sophistication, made their way into the cabin, along with aircraft design improvements that produced larger, steadier and more reliable air carriers. The stewardess' role in making air travel more attractive was quickly recognized and their ranks expanded world wide.

Today, over a half century later, there are some 50,000 persons on duty in U.S. air carrier cabins, and about 95 percent of them are still women. An estimated 140 women are serving in the flight cockpit. Although that environment is still 99.6 percent male, the ladies definitely have their foot in the door, and as Ellen Church and her nurses demonstrated, big things come from small beginnings. ■

Tri-tailed Boeing 80 aircraft in flight over the Wyoming Rockies.

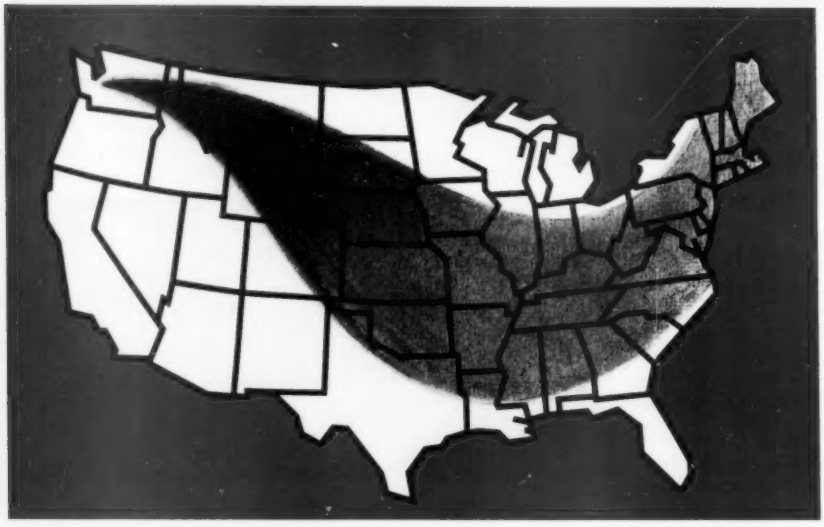
ASH-COATED Piper *Cherokees* temporarily grounded at Toledo-Winlock Municipal Airport, 30 miles north of Mt. St. Helens in Washington State. Military helicopters in background rescued 120 persons from the mountain's slopes following the first major eruption on May 18. Nightly overhauls, including oil and filter changes and cleaning out of all air intake systems, kept aircraft operational.

VOLCANIC ASH FALLOUT HAZARD TO EXPOSED AIRCRAFT

An FAA Airworthiness Alert has been issued for aircraft affected by volcanic ash fallout from the eruption of Mt. St. Helens. All aircraft exposed to the ash, in the air or on the ground, should have undergone cleaning and inspection of all systems before being flown, because of the highly corrosive and abrasive nature of the ash. (See map for dispersal range.)

Analysis shows the ash contains such abrasive minerals as silica, feldspar, mangenese, boron, cobalt, and zinc as well as corrosive sulfuric acid and floride salts, which begin to damage surfaces almost immediately upon contact. The size of ash particles ranges from easily visible to almost microscopic, which engine air and oil filters cannot block out. Washing does not remove the microscopic residue.

The ash must be removed by hand brushing or preferably air pressure cleaning of all surfaces *before* washing with liquids. The aircraft should then be washed and rinsed with clean water until tests with nitrazine paper indicate no acid residue. Then solvents approved by the manufacturer may be used for more thorough washing as well as for purging pitot-static systems and cleaning vacuum lines and other external components, such as antennas. Electronic instruments that are air-cooled should be inspected for contamination and cleaned.



Engines could suffer abrasive damage from ash fallout adhering to turbine and compressor blades as well as cylinders and valves. Small particles of ash can become suspended in oil and carried throughout the engine. Engines should have a thorough external cleaning in the same manner as the airframe—having the ash brushed or blown away before washing. Oil and fuel should be drained and replaced after all filters and screens are changed and systems flushed and cleaned. Comparing spectrogaphic oil analysis taken shortly after cleaning to earlier analyses will show whether damage has occurred. Frequent subsequent oil changes and recurrent inspections are suggested to monitor engine condition.

Full inspection and maintenance procedures for ash-affected aircraft are given in the Airworthiness Alert, AC 43–16, entitled "Volcanic Ash Fallout." It is available free from the Flight Standards National Field Office, FAA Aeronautical Center, Oklahoma City, OK, 73125. Heavily affected aircraft should be inspected and cleaned by FAA qualified mechanics.

Airplane buyers might want to have a complete history of any airplane that could have been based in areas of heavy volcanic ash fallout. Suspiciously cheap bargains with low tach time could have been used "only by a little old lady who went sightseeing over Mt. St. Helens."

MILITARY TRAINING ROUTES

Beginning August 17, 1980 VFR navigational charts will show IFR and VFR military training routes where low-altitude, high-speed flight maneuvers may be taking place. Civilian aircraft are not prohibited from flying through these routes, but extreme vigilance is advised.

Pilots should check with the nearest flight service station to learn about periods of military training use, and possible relocation of military routes. Current route status is also given in the Aeronautical Chart Bulletin of FAA's Airport/Facility Directory, and shown on VFR Wall Planning Charts.

On sectionals, military training routes are shown in gray and designated as "VR" for VFR and "IR" for IFR.

WEATHER SERVICES AC REVISED

FAA has revised and reissued the Advisory Circular 00–45B, "Aviation Weather Services," used as a supplement to "Aviation Weather," the pilot's standard weather manual.

"Aviation Weather Services" describes the aviation weather service program in greater detail and further explains aviation weather forecasts and reports and how they are compiled and made available to pilots.

AC 00–45B is available for $4.50 from DOT Publications Section, M443.1, Washington, DC, 20590. (Stock number 050–007–00513–0)

• Baron Boo-Boo?

Having recently purchased a Baron 58, your "One Engine Out" article (January/February 1980) momentarily caught me by surprise. My primary criteria for determining which twin to purchase was single-engine performance. In *Figure 2* in the article there is an error. The correct "percent loss" for a Baron 58 is 77.45, not the published 80.70. I cannot speak for Beech, but a correction would be appreciated.

Frank H. Bell
Jackson, MS

Beech built a Baron *58 and a* Baron *58A. Both models had essentially the same components, but the earlier version had a higher maximum gross weight (5,400 lbs. compared with 4,990 lbs.). This could account for the difference in single-engine climb capabilities.*

• Partial vs "Thin" Obscuration

In the article "Marginal Minimums," in the March/April 1980 issue of your fine publication, a reference to a weather report on p. 10 is a bit disconcerting. You report that the airfield in question was reporting "thin obscuration, visibility one and one-half miles." The term "thin obscuration" is incorrect. What was probably meant was "partial obscuration."

As a career weather forecaster, I find many general aviation pilots think the sky symbol "–X" means "thin obscuration." "–X" really means "partial obscuration," or that from 1 to 9 tenths of the sky is obscured by surface-based fog, haze, smoke, or blowing snow. I wonder how many have flown all the way down to the ground looking for the "thin?"

R.E. Merritt
Mobile, AL

In the accident referred to, "thin obscuration" was misstated in the official accident report from NTSB. The flight service station that issued the terminal forecast for the time of the accident, reported that it should have read, "Sky partially obscured."

The symbol "–X" meaning "partial obscuration," is used in hourly aviation weather reports, but a "–" before the ceiling terms ***scattered, broken,*** *or* ***overcast*** *does mean "thin."*

In aviation meteorology, "obscured" means that the sky or clouds are partially or totally hidden from an observer on the ground. "Thin" means that the cloud cover is mostly transparent and does not constitute a ceiling. Thus, "thin obscuration" would be a contradiction in terms.

• Underpinning the Underpining

I was pleased to read the letter in the March/April "Forum" and your editorial reply relating to the "clarity and simplicity of the English language" used in the magazine. However, I would like to point out a couple of misuses of the English language in an article—"Looking for Trouble in the Landing Gear"—in the same issue.

First of all, I looked in my 1972 edition of Webster's Seventh New Collegiate Dictionary and could not find either "underpining" or "safetied."

Actually, I'm only making a little fun of your proofreader. I like the word "safetied" when referring to nuts and bolts. I really enjoy your publication and look forward to each issue.

Donald M. Lammers
LaFayette, NY

Our 1969 Webster's Seventh New Collegiate Dictionary defines "safety" also as a verb meaning "to protect against failure, breakage, or accident." "Underpinings" does not appear, as they insist on spelling it with two "n's." We'll go along.

• Missed Approach

I have a comment about the answer in the March/April issue's "Instrument Corner" about Missed Approach Points. I agree that the MAP for non-precision approaches usually is the runway threshold, but not always. The MAP can also be some distance from that threshold, depending upon the location of the VOR, DME, or NDB used in the approach.

Harold O. Bourne
Jamaica, NY

True. If the NAVAID associated with the MAP is on the airport, the MAP may be located beyond the runway threshold. Also, the MAP may be affected by obstacles in the missed approach maneuvering area, i.e., the MAP may be located short of the threshold if missed approach obstacle clearance criteria dictates.

• Decision Height and Middle Marker

I would like to comment on Dr. Toker's question in the March/April 1980 "Instrument Corner." In your reply, you stated that the Missed Approach Point for an ILS approach is "in the vicinity of the middle marker." For any and all ILS procedures, the missed approach point is that point in space at which the glide slope intersects the decision height. Although the middle marker may be there also, it is coincidence. On most approaches, a pilot who crosses the middle marker before encountering the glide slope has gone below DH—a potentially dangerous situation unless the requirements of 91.116 have been satisfied.

R. L. Taylor
Columbus, OH

Your definition of the MAP is correct; however, it is not true that a pilot has necessarily gone below DH if he crosses the middle marker. When such ILS approaches are planned and the NAVAIDs constructed, the land directly below the missed approach point may not be purchasable or accessible. Flight standards criteria, however, require the MM to be located longitudinally within ± 500' of the DH. In such cases, approach plates will clearly show the marker located before or after the missed approach point.

• Air Marking Carried On

I read the interesting story about Mrs. Blanche Noyes in my January/February issue. Thank you for writing it.

Do you know if FAA has made any attempt to continue the air marking project she began?

Dan McKee
Raytown, MO

FAA no longer has an office of air marking since Mrs. Noyes' retirement in 1972. The Ninety-Nines, an organization of women pilots which Mrs. Noyes helped to establish, has taken over air marking activities with the help of state and local governments.

• Gone with the Breezy

Some years ago you answered a letter from someone who was inquiring about a "Breezy," and you gave the address of the Breezy Corporation. I wrote to that address recently asking for plans, information, photos, etc., but my letter was returned unopened. Are they out of business? Is there anyway I can get a set of plans or some photos from anyone, anywhere?

C. P. Michel
Bakersfield, CA

According to the Experimental Aircraft Association, there is no longer a Breezy Corporation, but plans and other information may be obtained by contacting Mr. Charles B. Roloff, P.O. Box 358, Palos Park, Il., 60464, telephone 312-598-6210.

• Elixers Aloft

In January 1980, Richard A. Sutter, M.D. received his private pilot's certificate at the age of 70, while continuing to practice medicine in St. Louis. No record, true, but this youthful attitude keeps him young below his years. Dr. and Mrs. Sutter beat my husband and me at tennis with regularity despite the fact they are my parents' age. In fact, they are my parents!

Judy Hinrichs
St. Louis, MO

Who says you can't teach an old doc new tricks?

FAA GENERAL AVIATION NEWS welcomes comments from our readers. No anonymous letters will be used, but names will be withheld on request. Address: FAA GENERAL AVIATION NEWS, AFO-807, Washington, D.C. 20591.

• Bewildered in the Blind

In the March/April 1980 issue, the article "Position Reports" advocates transmitting in the blind on the air-to-air frequency of 122.9 when there is no UNICOM or when the UNICOM is not operating. It is my understanding (from the Airman's Information Manual) that when UNICOM is not operating pilots should continue to use the frequency designated for that airport. Could you clear this up?

Name Withheld

Sorry, we goofed this one. AIM states that ". . . if unable to contact the UNICOM operator, use appropriate UNICOM frequency to broadcast positions or intentions in the blind. Should have read, for airports with no tower, FSS, or UNICOM broadcast positions or intentions in the blind on 122.9." And thank you.

• Clear Vision

I'm at the age where a glaucoma test is recommended as a part of the regular eye examination. I understand that some sort of desensitizing drops are put in the eye before the test, and I was wondering how long after the drops wore off before I could fly again.

L. Cooke
Winchester, VA

If drops are used to "numb" the eyes for the glaucoma test, the effect should wear off within a few hours at most. Assuming an open cockpit is not being used, no flying restriction is necessary. Some practitioners now use a glaucoma screening device that does not touch the eye, and no drops are necessary.

• Ignoring Visibility?

Your article "Marginal Minimums" (March/April 1980) leaves the casual reader with the impression that the only requirements for landing from an instrument approach are having the runway environment "clearly and continuously" in sight and the aircraft being in a position to land normally. You virtually ignore minimum visibility distance. Why?

James M. Thoburn
Rochester, NY

Stressing the requirements of FAR Part 91.117 should not lead to ignoring the visibility minimums defined in Part 91.116. A proposed change to FAR Park 91 (see "News" p. 14, May/June 1980) seeks to clarify the issue. The rule change will embody the requirements in a single rule.

INSTRUMENT CORNER

• Mandatory Descent to MEA?

Paragraph 370(b) of the Airman's Information Manual states that when an approach clearance has been received and when the aircraft is established on a published route, published altitudes apply to descent unless a different altitude is assigned. Does this mean it is *mandatory* to descend to the MEA on an airway immediately if cleared for the approach while some distance from the facility, provided no altitude restriction was issued?

Thomas E. Miller
Ballston Spa, NY

If no descent instruction is included in the clearance, descent may be commenced at the pilot's discretion provided the aircraft is on a published route or segment of an instrument approach procedure. *If in doubt advise Approach Control of your intentions.*

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